TBT0600

12v Battery Tester with Printer

Tests Batteries, Starter Motors, Alternators & Voltage Drop.
Printer Included, can also download results to PC

EN INSTRUCTIONS FOR USE

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INSTRUCTIONS FOR USE

EN

Battery tester and vehicle starting/recharging system analyser.

This tester is used to check the efficiency of both batteries connected to vehicles and disconnected batteries in storage. It is used to check the status of 12V batteries type-approved to different standards. The tester provides information on both the terminal voltage and the surge current the battery can provide, and offers an evaluation of this: good, recharge, replace. The tester can also be used to check the efficiency of the alternator on 12V vehicles.

WARNINGS

Operating precautions

NB: Read the **WARNINGS** carefully before using the product. The improper use of the product will void the warranty!

- This device must not be used by anyone not in good health or children without supervision.
- Keep out of the reach of children. This device is not a toy.
- Always wear protective goggles and keep the face as far away as possible when connecting and disconnecting the battery.
- The battery contains corrosive liquid; in the event of accidental contact with the skin or the eyes, rinse immediately with water and seek medical advice.
- Do not drop metal tools on the battery. This could cause a short-circuit.
- Do not wear metal objects (rings, bracelets, watches etc.) when working with a battery
- In the event of damage, the device must be repaired or maintained only by qualified staff.
- Do not use on 24V batteries and systems. 24V connection may cause damage to the device.

PREPARING FOR TEST

1. Make sure that the area around the battery is well ventilated before starting the test.
2. Clean the battery terminals. Take care to prevent any corrosive substances from coming into contact with the eyes.
3. Check that the battery container or lid are not cracked or broken. Do not use the tester if the battery is damaged.
4. If the battery is not a maintenance-free sealed one, add distilled water to each cell until the acid battery is at the level specified by the manufacturer. Do not exceed the recommended level.
5. If the battery must be removed from the vehicle to test it, always remove the ground terminal from the vehicle first. Make sure that the vehicle accessories are switched off in order to prevent the formation of electric arcs.

SECURING PRINTER

1. To secure the mobile printer in position, first remove the cover from the tester back (igure 1). Then the printer can be fitted in by making it slide as far as the fixing point (figure 2).

figure 1

figure 2

2. Open the ticket compartment, and secure the printer by means of the supplied screw (figure 3). Fit in the roll with the end part turned upwards (figure 4). Make sure that the paper sticks out by at least 2 cm, before closing the compartment (figure 5).

figure 3

figure 4

figure 5

INSTRUCTIONS FOR USE

EN

SELECTING LANGUAGE

To change the language of the analyser, enter the “Configuration Menu”. Press “Enter”, and press ▼▲ to select the item “Language”; press “Enter” again. On the next screen the required language can be chosen by pressing ▼▲, and selected by pressing “Enter” again.

HELP [?] FEATURE

This feature makes it possible to get used, at any time, to the operation selected on the tester screen. It describes the feature and the correct way of using the analyser. To enable this feature, just press the [?] key; a screen describing the selected item will appear automatically.

EXAMPLE:

If you press ▼▲ to move onto the item “Coniguration Menu” and press the [?] key , the following description will be shown: “This menu allows you to set the language displayed by the tester and also to adjust the brightness of the LCD display”. Likewise, if you move onto any other item, the HELP [?] option will describe how to use that item and/or what it is used for. To return to the previous screen, just press “Exit”.

INTERNAL MEMORY

The tester is fitted with an internal memory which can record the data of the latest tested vehicle, so that they can be later input into the computer or checked without having to perform the test again.

Whenever a new test needs to be started, press ▼▲ to move onto the item “New: Erase Memory”, and press “Enter”. Once this option has been selected, the tester will erase all the stored data of the latest test performed. A new set of tests can then be started on the vehicle (battery, grounding, starter or alternator). Once a test (e.g. a battery test) has been completed, you can perform the other tests or return to the initial menu; if you return to the initial menu, but want to continue the previously started test, use the ▼▲ keys to select the item “Continue Test...”, and press “Enter”. The tester will automatically bring you back to the screen that allows the type of test to be selected, and you will be able to continue with a different test on the vehicle, without losing the previously saved data.

OPERATING AND USE INSTRUCTIONS

1. Before testing a battery in a vehicle, switch off the vehicle, all the accessories and any other loads. Close the vehicle doors and boot.

WARNING: After switching off the vehicle engine, turn on the headlights, and leave them on for approximately 30 seconds, so that the battery surface charge can be dissipated.

note: the screen does not show anything if the meter is not connected to the vehicles battery.

2. Make sure that the battery terminals are clean. Clean with a metal brush if necessary . Clamp the black lead to the negative terminal on the vehicle battery. Clamp the red lead to the positive terminal on the vehicle battery. ***Make sure that the tester clips and the battery posts make good contact with each other, so that a correct test can be performed.***

3. Press ▼▲ to select “New: Erase Memory” or “Continue Test...”. Press “Enter” to confirm. Press ▼▲ to select “Battery Test”. Press “Enter” to confirm. ***WARNING: If any battery surface charge is detected, the tester will remove it. If the battery surface charge is too high to be removed, the tester will prompt you to turn on the headlights to remove it.***	Select Test▲▼ Battery Test Grounding Test Starter Test Alternator Test

4. Press ▼▲ to select the battery type:
   a. SLI [WET type] STANDARD LIQUID
   b. AGM [Flat/Spiral]
   Press “Enter” to confirm your choice.

Select Battery
SLI (Wet type)
AGM (Flat/Spiral)

[Enter] to proceed

INSTRUCTIONS FOR USE

EN

5. Press ▼▲ to select the battery test standards: CCA, SAE, DIN, JIS, IEC, EN, CA, Unknown Press “Enter” to confirm your choice.	Select Rating▼▲ CCA – SAE – DIN JIS – IEC – EN – CA Unknown
6. Press ◄ ► ▼▲ to input the battery capacity of CCA • CCA 100~1700 • EN 100~1700 • SAE 100~1700 • CA 100~1700 • DIN 100~1000 • Unknown • JIS 100~1700 (see codes conversion table) • IEC 100~1000 Press “Enter” to start the test.	Input Battery Rating Increase/Decrease: ▲Single digit▼ ◄By hundredth► xxx CCA
7. The test will take a few seconds.	Analysing... Please wait!

8. When the test has been completed, the display shows the current volts and CCA.

One of the following results will also be displayed:

Battery: Good: The battery is good and holds the charge.	Battery: Good Measured: xxxA SAE Rating: xxxA SAE Volts: Int. R: x.xx mΩ Life: xx%
Battery: Recharge: The battery is flat; the battery conditions cannot be determined correctly until it has been fully recharged. Recharge & retest the battery.	Battery: Recharge Measured: xxxA SAE Rating: xxxA SAE Volts: xx.xx V Int. R: xx.xx mΩ Life: xx%
Battery: Replace: The battery does not hold the charge. It should be replaced immediately.	Battery: Replace Measured: xxxA SAE Rating: xxxA SAE Volts: xx.xx V Int. R: xx.xx mΩ Life: xx%

9. Press “EXIT” to return to step 3, or remove the test clips from the battery posts to end the test.

GROUNDING SYSTEM TEST. "GROUNDING TEST"

1. Press ▼▲ to select "New: Erase Memory" or "Continue Test...". Press "Enter" to confirm.
   Press ▼▲ to select the grounding system test, "Grounding Test". Press "Enter" to confirm.

   Select Test ▲▼
   Battery Test
   Grounding Test
   Starter Test
   Alternator Test

2. The display will appear as follows.
   Clip the black clip to the engine body or the car chassis and the red clip to the battery [+] post
   Then press "Enter".

   Clip black clip to engine body or car chassis and red clip to positive battery post [+]

3. The test will take a few seconds.

   Analysing...
   Please wait!

4. When the test has been completed, transfer the black clip from either the engine or the vehicle chassis to the battery negative post [-]. Take less than 15 seconds to complete this procedure, not to lose the recorded data (otherwise, repeat the test).

   Now transfer black clip to bat tery negative post [-]. The time limit given is 15 seconds before the memory is lost.

5. Once the black clip has been connected to the battery negative post [-], the display will appear as follows. Press "Enter" to proceed.

   [Enter] to proceed

6. The test will take a few seconds.

   Analysing...
   Please wait!

7. If the measured Ohms are within limits, the display will appear as follows.

   Results: OK
   Xx,xx mOhm

8. If the measured Ohms are above limits, the display will appear as follows.

   Results: High Ohms
   Xx,xx mOhm

9. If a wrong procedure was performed during the test, the display will appear as follows.

   Results: Not detected
   Wrong procedures.
   Try again and follow given instructions step by step

10. Press "EXIT" to return to step 1, or remove the test clips from the battery posts to end the test.

START SYSTEM TEST, "STARTER TEST"

1. Fix the black clip terminal to the negative terminal of the vehicle battery. Fix the red clip terminal to the positive terminal of the vehicle battery.

2. Press ▼▲ to select "New: Erase Memory" or "Continue Test...". Press "Enter" to conirm. Press ▼▲ to select the "Starter Test". Press "Enter" to conirm.

   Select Test ▲▼
   Battery Test
   Grounding Test
   Starter Test
   Alternator Test

3. The following screen will appear:
   Battery: xxxV
   Crank the engine until it starts. Press "Enter" to proceed.

   Battery: xx.xxV
   Crank engine now until it starts.
   [Enter] to proceed

4. When the engine is started, one of the three results will be shown together with the reading of the measured voltage.

Result: OK

The system shows normal starting voltage. Press “EXIT” and “Alternator Test” to test the charging system.

Result: OK
Min. Volts: xx.xxV
Volt Drop: Normal

Result: Abrupt Voltage Drop

The starting voltage is below normal limits; find the starter motor fault following the manufacturer’s recommended instructions.

Result: High Voltage Drop
Min. Volts: xx.xxV
Volt Drop: High

Check starter relay, battery terminals or battery age.

Result: Not Detected

The starting voltage was not detected.

Result: Not detected
No change in volt drop.
Check clamping at battery side and test again.

RECHARGE SYSTEM VOLTAGE TEST, “ALTERNATOR TEST”, WITH ELECTRIC LOADS OFF

1. If the starting voltage is normal, press “EXIT” and “Alternator Test” to perform the charge system test. Switch off all the accessories of the vehicle being tested, including lights, air conditioner, radio etc. before starting the engine.

Select Test ▲▼
Battery Test
Grounding Test
Starter Test
Alternator Test

2. Press “Enter” to view the following screen:
   Start the engine and keep it running. Press “Enter” to continue.

Start engine
and keep it running.
[Enter] to proceed

3. The following screen will appear:
   Press “Enter” to continue. Rev the engine to 3,000 rpm for 10 seconds; then press “Enter” again to view the results.

Make sure all electrical loads are turned off.
Rev engine to 3,000 rpm
Press [Enter].
Hold on to this 3,000 rpm for 10 seconds, then release pedal

4. The following screen will appear:

A 3.000 rpm:
Av.Volts: xx,xV
Max. xx,xV <xx,xV
Min. xx,xV >xx,xV

5. Press “Enter” again; one of the three results will be displayed along with the current measured reading.

Result: Low Charge

The alternator is not supplying enough voltage to the battery. Check the belts and make sure that the alternator is rotating with the engine running. If the belts slip or are broken, replace them and repeat the test. Check the connections from the alternator to the battery connection is loose or heavily corroded, clean or replace the cable, and test again. If the belts and connections are in good condition, replace the alternator .

Result: Low Charge
At 3,000 rpm,
No Load Test:
Min. xx,xV >xx,xV
. If the
Check for
loose belt
and alternator.

Result: Good

The system shows normal output voltage from the alternator. No problems have been detected.

Results: Good
At 3,000 rpm,
No Load Test:
Average Charging
Volts: xx,xV

Press [Enter] to
continue Loading
Test

Result: High Charge

The output voltage from the alternator to the battery exceeds the normal operating limits. Make sure that there are no loose connections and that the ground connection is normal. If there are no connection problems, replace the regulator. As most alternators have built-in regulators, this means that the alternator will have to be replaced. The normal voltage limit of a typical car regulator is 14.7 volts +/- 0.05. Check the manufacturer alternator and correct limit, which will vary according to vehicle and manufacturer.

Results: High Charge
At 3,000 rpm,
No Load Test:
Max. xx,xV <xx,xV

Check the
specifications for the
regulator.

RECHARGE SYSTEM OPERATING TEST WITH ELECTRIC LOADS ON

1. Press “Enter” to perform the alternator TEST under charge: switch on the heating, main-beam headlamps, rear demister. Do not use cyclical loads, such as air conditioning or windscreen wipers.

2. The following screen will appear:
Press “Enter” to continue. Rev the engine up to 2,000 rpm for 10 seconds; then press “Enter” again to view the results.

Switch on all electrical loads.
Rev engine up to 2,000 rpm.
Press [Enter].
Hold on to this 2,000 rpm for 10
seconds, then release pedal

3. The following screen will appear:

At 2,000 rpm:
Av. Volts: xx,xV
Max. xx,xV >xx,xV
Min. xx,xV >xx,xV
Press [Enter] for results

4. Press “Enter” to continue testing the system with the accessories switched on. One of the following three results will be displayed, along with the current measured reading.

Result: High Charge

The voltage output from the alternator to the battery exceeds the normal limits of a correctly working regulator. Make sure that there are no loose connections and that the ground connection is normal. If there are no connection problems, replace the regulator. As most alternators have a built-in regulator, this means that the alternator will have to be replaced.

Results: High Charge
At 2,000 rpm,
Loading Test:
Max. xx,xV <xx,xV

Check for loose belt and alternator.

Result: Low Charge

The alternator does not supply enough current to charge the electrical system and the battery. Check the belts and make sure that the alternator is rotating with the engine running. If the belts slip or are broken, replace them and repeat the test. Check the connections from the alternator to the battery. If the connection is loose or heavily corroded, clean or replace the cable and test again. If the belts and connections are in good condition, replace the alternator.

Results: Low Charge
At 2,000 rpm,
Loading Test:
Min. xx,xV >xx,xV

Check for loose belt and alternator.

Result: Good

The system shows normal voltage output from the alternator. No problems are noted.

Results: Good
At 2,000 rpm:
Loading Test:
Average Charging
Volts: xx,xV

DRIVER INSTALLATION

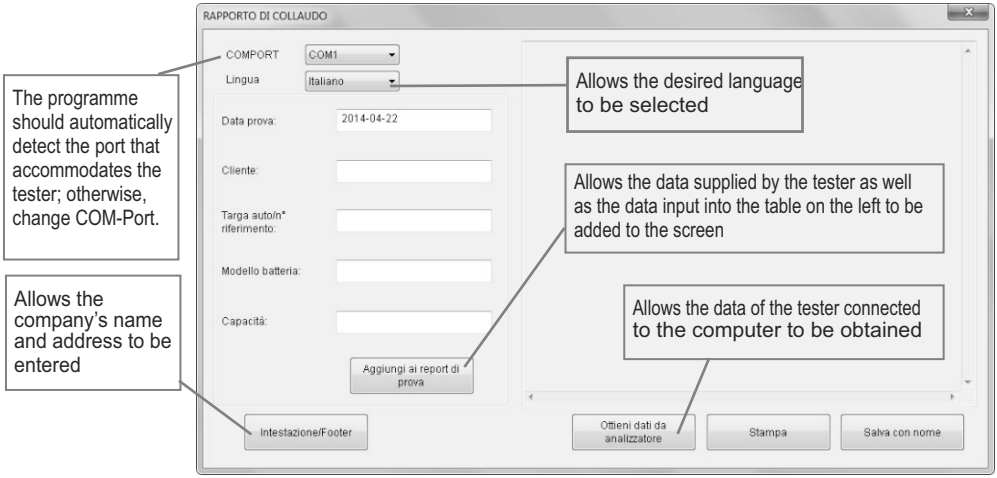
IMPORTANT!!

Before the drivers are installed, the tester should not be connected to the computer through the USB port; otherwise, installation will fail, and no results will be shown when the tester is connected.
If this mistake was made and the drivers were installed at a later stage, after connecting the tester to the computer, the drivers will have to be uninstalled, making sure that the tester is not connected through the USB port.

The drivers are installed through the CD supplied with the tester case.
Follow the various installation steps; when these are completed, you will be able to launch the programme.
When the programme has been launched, a screen will appear, informing you that the tester should be cennected to the computer; hence it can be connected through the USB port.
The tester will automatically be detected by the computer. Now you can select the item “PC Link” from the “Configuration Menu” of the tester. After selecting it, press “Enter”. An icon will appear on the tester screen, to show the connection between the tester and the computer. After a few seconds you can obtain the data from the analyser through the programme.

INSTRUCTIONS FOR USE

EN


RAPPORTO DI COLLAUDO
COMPORT
COM1
Lingua
Italiano
Data prova:
2014-04-22
Cliente:
Targa auto/n° riferimento:
Modello batteria:
Capacità:
Aggiungi al report di prova
Intestazione/Footer
Ottieni dati da analizzatore
Stampa
Salva con nome
The programme should automatically detect the port that accommodates the tester; otherwise, change COM-Port.
Allows the company's name and address to be entered
Allows the desired language to be selected
Allows the data supplied by the tester as well as the data input into the table on the left to be added to the screen
Allows the data of the tester connected to the computer to be obtained

NB: The Test Report programme runs on computers with Windows XP, Vista, 7 or 8. To allow the feature of the programme, "Save as", to operate properly, the PC where the programme has been installed must have the complete version of Micro soft Word 2003 or a later version.

MAINTENANCE

When not in use, the device must be stored in a dry place to avoid exposure to humidity. To clean the outer body, disconnect the device and clean with a soft cloth.

GENERAL USER INFORMATION

NOMINAL RATING OF THE BATTERY – Ah

Quantity of current (A) a battery can provide in the time (h) normally considered in 10 hours.

VRLA/GEL BATTERIES

A gel battery is a Lead-Calcium battery with positive and negative plates immersed in a gelatinous solution. It is hermetically sealed and requires no maintenance. These batteries are usually used in intense conditions. Their strength makes them particularly suited for motorcycles, off-road vehicles, operating machinery and boats.

STANDARD LIQUID / WET BATTERIES

A lead battery with positive and negative plates immersed in a water and sulphuric acid solution. They may be hermetic or fitted with caps for maintenance. This is the most commonly used battery in the automotive sector.

AGM SPIRAL BATTERIES

Gas recombination batteries (AGM) are continuous band batteries in which the same plate, electrolyte solution and silicon and polymeric fibre separators are rolled in a spiral. They are maintenance-free, with a high starting surge designed specifically for extreme and heavy-duty conditions. They withstand intense charge-discharge cycles.

AGM FLAT PLATE BATTERIES

FLAT PLATE gas recombination batteries (AGM) are sealed batteries using a VRLA pressure-control system. In this case, the electrolyte solution is held by fibreglass separators generally placed between the plates. These high-performance, maintenance-free batteries are ideal for intense cycles, high loads and working in partial states of charge. These batteries are suited to the latest generation Start & Stop systems.

PROTECTING THE ENVIRONMENT

This device is marked with a recycling symbol. This means that when no longer in use it must be disposed of separa tely in an appropriate disposal site and not with normal household refuse. This is a beneit for the environment and an advantage for all.